

# Quarterly Report – Public Page

**Date of Report:** First Quarterly Report – December 20, 2016

**Contract Number:** DTPH5616T00002

**Prepared for:** PHMSA/DOT

**Project Title:** Development of EMAT Sensors for Corrosion Mapping of  
UNGP Using ILI Tools

**Prepared by:** Quest Integrated, LLC

**Contact Information:** Phillip D. Bondurant, [p.bondurant@qi2.com](mailto:p.bondurant@qi2.com), (253) 480-2002

**For quarterly period ending:** December 31, 2016

## Objective

The work proposed in this project will develop a bench-scale electromagnetic acoustic transducer (EMAT) sensor that can be used to assess small diameter unpiggable pipelines containing reduced diameter fittings and other restricting features. The EMAT will be specifically designed to directly measure the remaining wall thickness. The proposed work will develop an EMAT sensor independent of any specific platform to allow integration with multiple piggable and unpiggable pipe inspection platforms. The accurate wall thickness data can automatically be fed into API 579 Fitness for Service (FFS) analysis, or into failure criteria such as ASME B31G or RSTRENG to allow for calculation of remaining wall strength.

## Technical Status

The contract with GTI was placed to assist with finalizing the requirements, develop a technical advisory group (TAG), provide advice for corrosion features for later testing and report review. The requirements definition report milestone was completed. Also, a review of existing literature and the sensor design milestone was completed describing a minimum of two sensor configurations for later evaluation.

## Results and Conclusions

Several interesting designs that have been researched that should help the performance of EMAT sensors operate in difficult to inspect and corroded pipes. This is early in the project so there have been no publicly released information.

## Future Work

- Prototype sensor assembly and testing.
- Finalize field requirements
- Finalize recruitment of the TAG and schedule the meeting.